USSR

BURTNIYETSE, N., Editor, Fiziologicheski i Opticheski Aktivnyy Polimernyye Veshchestva. Trudy Vtorogo Vsesoyuznogo Simpoziuma po Khimii i Fiziko-Khimii Fiziologicheski i Opticheski Aktivnykh Polimernykh Veshchestv, Riga, "Zinatne," 1971, 215 pp

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BURTNIYETSE, N., Editor, Fiziologicheski i Opticheski Aktivnyy Polimernyye Veshchestva. Trudy Vtorogo Vsesoyuznogo Simpoziuma po Khimii i Fiziko-Khimii Fiziologicheski i Opticheski Aktivnykh Polimernykh Veshchestv, Riga, "Zinatne," 1971, 215 pp

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BURTNIYETSE, N., Editor, Fiziologicheski i Opticheski Aktivnyy Polimernyye Veshchestva. Trudy Vtorogo Vsesoyuznogo Simpoziuma po Khimii i Fiziko-Khimii Fiziologicheski i Opticheski Aktivnykh Polimernykh Veshchestv, Riga, "Zinatne," 1971, 215 pp

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BURTNIYETSE, N., Editor, Fiziologicheski i Opticheski Aktivnyy Polimernyye Veshchestva. Trudy Vtorogo Vsesoyuznogo Simpoziuma po Khimii i Fiziko-Khimii Fiziologicheski i Opticheski Aktivnykh Polimernykh Veshchestv, Riga, "Zinatne," 1971, 215 pp

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USSR

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USSR

BURTOV, A. I., GRUSHVITSKIY, R. I., METTER, E. Ya., PETROV, V. A., PLATONOV, V. V., SAVUTKIN, V. V., VEDESHENKOV, V. A., VOLKOV, A. F., ZENKIN, V. D., LIKHONINSKIY, V. S., and SOROKIN, G. K.

"Computer Device"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 27, 1972, p 162, No (11) 351216

Translation: This patent describes a computing device containing resolving modules with decoupling cells at the power supply inputs. It also has a control block connected to the inputs of a switching block and an efficiency indicator. Every output of the switching block is connected to the control input of one of the decoupling cells, thus improving the reliability of the device.

USSR UDC: 681.32.001

BURTOV, A. I., PETROV, V. I., SAVUTKIN, V. V., SHAGULIN, V. I., VOLKOV, A. F., SOROKIN, G. K., TRAPEZNIKOV, V. A., CHEGLAKOV, Ye. A., CHEKMAREV, Yu. D.

"A Device for Determining the Region of Operability of a Digital Computer With Respect to Supply Voltages"

USSR Author's Certificate No 291206, filed 7 Aug 68, published 29 Mar 71, (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 10, Oct 71, Abstract No 10B146 P)

Translation: There is a well-known device which determines the region of operability of a digital computer with respect to supply voltages. This device contains a control unit, voltage commutation module, an element for controlling the sign of the independent voltage increment, and a device for visual display. However, such devices are incapable of monitoring the changes in digital computer elements which occur as a result of various ambient factors while the computer is in operation. To speed up determination of the limits of the region of operability and improve the reliability of measurements, the signal input of the element for controlling the sign of the independent voltage increment in the device intorduced by this Author's Certificate is connected to the output of the voltage commutation module, while the controlling input and the

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USSR

BURTOV, A. I. et al., Soviet Patent No 291206

output of the sign controller are connected to the control unit, the auxiliary output of the control unit being connected to the device for visual display, which is connected in turn to the voltage commutation module. This enables observation of the change in the region of operability of the digital computer with respect to supply voltages during operation, as well as evaluation of various computer characteristics (e.g., the availability factor, operability margin with respect to drift of element parameters, operating stability with respect to random perturbations of the power supply and the ambient medium). One illustration.

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AA0044814

Soviet Inventions Illustrated, Section II Electrical, Derwent, UR 0482

2/70

243712 INCREASING THE RESOLVING POWER OF A MEASURING BRIDGE without higher requirements from sensing elements can be achieved thus. The bridge is fed with bipolar impulses of potential with positive and negative impulses equal in amplitude and duration. The energy, carrying information on the parameter under control (e.g. light beam) is commutated in step with the feeding potential. Therefore, the useful output signal of the bridge does not change the sign, and the signal resulting from the drift of parameters of bridge elements will be changing the sign in step with the feeding potential. Averaging the output signal for the period of feeding potential allows to separate the useful signal and thus to eliminate the influence of the drift in bridge elements on its metrological performance.

24.7.67 as 1175104/18-10.B.L.RUDNITSKII et al.
(26.9.69) Bul 17/14.5.69. Class 21e. Int.Cl.G 01 r.

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AUTHORS: Rudnitskiy, B. L.; Burtov, Ya. I.; Didenko, D. A.

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USSR

UDC: 621.317.337

BURTOVOY, D. P., MIRONENKO, V. L., and TERESHCHENKO, A. I.

"Using Open Cylindrical Limited Resonators for Investigating the Dielectric Characteristics of a Material"

Kiev, Izvestiya VUZ -- Radioelektronika, Vol. 13, No. 10, 1970, pp 1085-1091

Abstract: Interest has been aroused by the ability of resonators of this type to find the dielectric capabilities of moving gaseous media as well as solid, liquid, or powdered substances partially or completely filling the resonator space. In the case considered by this article, the dielectric is in the shape of a cylindrical rod placed coaxially with the resonator and partially filling it. The measurement and its method are analyzed only for the case of type H_{011} oscillations. In the theoretical analysis, the walls of the circular cross-sectioned resonator are considered to be infinitely long. After the theoretical portion of the article, in which formulas are obtained for determining the parameters of solid, liquid, and powdered substances, there is an experimental

BURTOVOY, D.P., et al, Izvestiya VUZ - Radioelektronika, Vol 13, No 10, 1970, pp 1085-1091

section giving details of the equipment and results of such measurements made with a resonator of finite length, 20 mm, and cut in the form of a cylindrical waveguide of 20 mm in diameter. A diagram of the resonator and a block diagram of the associated equipment are given. Also presented is a table of the results of the experimental work performed on a number of materials including ebonite, textolite, granulated table salt, and the like. The authors note that they also obtained formulas for determining the concentration of the plasma partially filling the resonator, and the effective collision frequency between the electrons and heavy particles. These formulas and the results of corresponding experiments are being separately published.

Acc. Nr: AP0045009

Abstracting Service: 5/70 INTERNAT. AEROSPACE ABST.

Ref. Code: UR0109

13

A70-23165 # **Calculation of the frequencies of an open cutoff resonator of rectangular cross section (Raschet chastot otkrytogo predel'nogo rezonatora priamougol'nogo poperechnogo secheniia).** P. Burtovoi, V. L. Mironenko, and A. I. Tereshchenko. *Radiotekhnika i Elektronika*, vol. 15, Feb. 1970, p. 389-391. In Russian.

Study of an open cutoff resonator in the form of an infinite rectangular waveguide with a semiinfinite metal partition located at a certain distance from one of the narrow walls of the waveguide. The results of a calculation of the frequency dependence of the phase of the reflection coefficient and the relative length of the resonator are presented in the form of graphs. A.B.K.

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19771905

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USSR UDC 621.394.622.2(088.8)

SIROBABA, Ya. Ya., POTAPOV, Ye. P., PERLYA, Ya. Z., BURTSEV, B. V.

"A Device for Cadence Synchronization"

USSR Author's Certificate No 258368, Filed 7 Feb 68, Published 24 Apr 70 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10D96 P)

Translation: This Author's Certificate introduces a device for cadence synchronization of radio line receivers with noise-like phase-keyed signals. The unit contains a pseudorandom sequence discriminator and a controlled oscillator. To increase resistance to noise interferences and eliminate ambiguities, the controlled oscillator is connected through a frequency divider to a phase shifter module, the output of the discriminator also being connected to this module through a filter and an integrator. The output of the phase shifter module is connected to a pulse shaper which is connected to a pseudorandom sequence generator. Resumé.

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1/2 035 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--STUDY OF THE HYSTERESIS OF THE DEMAGNETIZING FIELD OF FERROMAGNETIC PLATES -U-

AUTHOR--BURTSEV, G.A.

B

COUNTRY OF INFO--USSR

SOURCE--DEFEKTOSKOPIYA, 1970, (1), 55-61

DATE PUBLISHED-------70

SUBJECT AREAS--METHODS AND EQUIPMENT, PHYSICS, MATERIALS

TOPIC TAGS--NONDESTRUCTIVE TEST, BIBLIOGRAPHY, MAGNETIC HYSTERESIS, DEMAGNETIZATION, FERROMAGNETIC MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0911 STEP NO--UR/0381/70/000/001/0055/0061

CIRC ACCESSION NO--AP0133000

UNCLASSIFIED

2/2 035 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0133000
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN INVESTIGATION IS REPORTED INTO THE HYSTERESIS OF THE DEMAGNETIZING FIELD IN THE CENTRAL TRANSVERSE CROSS SECTION OF RECTANGULAR PLATES OF MAGNETICALLY SOFT FERROMAGNETIC MATERIALS UNDER QUASI STATIC AND DYNAMIC MAGNETIC REVERSAL CONDITIONS.

UNCLASSIFIED

1/2 038 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--STUDY OF THE RELATIONSHIP BETWEEN THE CENTRAL COEFFICIENT OF DEMAGNETIZATION OF FERROMAGNETIC PLATES AND THEIR MAGNETIZATION -U-

AUTHOR--BURTSEV, G.A.

COUNTRY OF INFO--USSR

SOURCE--DEFEKTOSKOPIYA, 1970, (1), 49-55

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, METHODS AND EQUIPMENT, PHYSICS

TOPIC TAGS--FERROMAGNETIC MATERIAL, DEMAGNETIZATION, MAGNETIC FIELD, BIBLIOGRAPHY, NONDESTRUCTIVE TEST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0910 STEP NO--UR/0381/70/000/001/0049/0055

CIRC ACCESSION NO--AP0132999

UNCLASSIFIED

2/2 038 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0132999

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RELATIONSHIP WAS STUDIED BETWEEN THE LOCAL COEFF. OF DEMAGNETIZATION AND THE MAGNETIZATION (INDUCTION) IN THE CENTRAL CROSS SECTION OF RECTANGULAR FERROMAGNETIC PLATES ON SWITCHING MAGNETIZATION IN A SPATIALLY UNIFORM LONGITUDINAL MAGNETIC FIELD.

UNCLASSIFIED

Aeronautical

USSR

UDC: None

ABRAMOV, Ye. I., BROTSKIY, A. N., BURTSEV, V. A., ZATOLOKIN, A. S., ZUBKOVA, T. I., and SMIRNOV, N. P.

"Hydraulic Damper for an Aircraft Flutter Model"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 27, 1971, p 119, No (11)351001

Abstract: The body of this device contains a rotor with a controlling valve and a charge-compensating device. By having this device in the form of an elastic membrane which converts into a sealing ring between the body and a hood filled with a transparent material, the size and weight of the damper can be reduced. A cross sectional drawing of the device is shown.

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USSR

UDC 621.384.6

BURTSEV, V. A., KLISHEVSKIY, S. M., LITUNOVSKIY, V. N., NADGORNAYA, M. P.

"Investigation of Processes for Acceleration of Plasma in a Coaxial Injector"

V sb. Elektrofiz. apparatura (Electrophysical Apparatus -- Collection of Works), Vyp 8, Moscow, "Atomizdata," 1969, pp 81-93 (from RZh-Elektronika i yeye primeneniye, No 5, May 70, Abstract No 5A303)

Translation: The paper investigates the acceleration of plasma in a coaxial plasma injector with the ratio of the electrode diameters close to one (i.e., in an injector with the geometry of the electrodes being a first approximation to two-dimensional geometry, but without edge effects). Principal attention is alloted to the processes taking place in the interelectrode space of the injector. The results of experiments made it possible to form a conclusion on the presence of two plasmoids: slow and fast. It is assumed that the slow bunch represents plasma moving with the speed of the current channel. The bunch is accompanied by a tail of cold impure plasma. An increase of the mass of the injected gas and the width of the gas distribution with a simultaneous growth of the mass of the gas, and a decrease of the stored energy lead to a reduction of the speed of the bunch. All this discusses electrodynamic acceleration of plasma. The constant speed of movement of a bunch is explained by the increase of its mass as a result of gas generation from the surfaces of the electrodes and their erosion and also the presence of closed current loops. 11 ill. 13 ref. G. B.

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USSR

UDC: 547.723'26.118.07

KOLESNIKOV, G. I., BURTSEV, V. A., Krasnodar Polytechnical Institute

"A Method of Synthesizing O,O-Dialkyl (4,5-Bisfurfurylhydroxy-6-Furyl) fulvenisopropylphosphonates"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 13, May 72, Authors' Certificate No 335252, Division C, filed 16 Feb 70, published 11 Apr 72, pp 88-89

Translation: This author's certificate introduces: 1. A method of synthesizing O,O-dialkyl (4,5-bisfurfurylhydroxy-6-furyl)fulvenisopropylphosphonates distinguished by the fact that O,O-dialkyl cyclopentadienylisopropylphosphonate is reacted with furfurol in the presence of a basic catalyst with subsequent isolation of the goal product by conventional methods. 2. A modification of this method distinguished by the fact that the O,O-dialkyl cyclopentadienylisopropylphosphonate and furfurol are taken in a molar ratio of 1:3.

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USSR

UDC 547.241:547.724.1

KOLESNIKOV, G. I., BURTSEV, V. A., and STRIZHOV, N. K., Krasnodarsk Polytechnical Institute

"Some Rules for the Condensation of 0,0-Dialkyl Cyclopentadienylalkylphosphonates With Furfurol"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 2, Feb 71, pp 305-309

Abstract: Condensation of 0,0-dialkyl cyclopentadienylalkylphosphonates with furfurol at temperatures below 25° yields mainly bis(hydroxy-2-furfuryl) derivatives. The yield of mono-(hydroxy-2-furfuryl) derivatives is either very small or nonexistent. It was determined that a 10% ethanol solution of KOH or metal alkoxides is the optimum concentration of the catalyst, while the ratio of the phosphonate to furfurol should be around 1:3. Relative yields of individual compounds formed would indicate that the dehydration rates of hydroxyfurfuryl derivatives are lower than the rate of aldol condensation and that the dehydration rate drops with addition of more furfurol. The condensation follows first kinetics in the temperature range studied.

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USSR

UDC 619:614.9-084.47:636

BURTSEV, V. I., BONDARENKO, I. M., and BAKULOV, I. A., All Union Scientific Research Institute of Veterinary Virology and Microbiology

"Classification of Methods of Immunizing Animals"

Moscow, Veterinariya, No 10, 1971, pp 50-53

Abstract: With respect to the technique of using antigen, the authors propose classifying methods of vaccinating animals: (1) injection, (2) scarification, (3) instillation, (4) dispersion, (5) alimentary, and (6) combined. With respect to the site of injecting antigen, they distinguish the following: (1) enteral (oral) and cloacal, (2) respiratory (nasal, intratracheal, inhalation or aerosol), (3) subcutaneous, (4) cutaneous - epicutaneous and intracutaneous; (5) intramuscular, (6) intravenous, (7) intramudder or intracisternal, (8) intraperitoneal, (9) conjunctival, and (10) intrasinusal. In discussing the respiratory site, the authors note that when an aerosol is used, part of the vaccine enters the respiratory tract and part settles on the skin. Under these conditions the antigen has little immunizing effect because it is inactivated by environmental factors (temperature, ultraviolet rays, and so forth).

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USSR

UDC 619:616.981.452.636.4

ARKHIPOV, N. I., PICHUGIN, L. M., BURTSEV, V. I., and KUSHNIR, A. T., All-Union Scientific Research Institute of Veterinary Virology and Microbiology

"Cytochemical Evaluation of Hog Cholera Virus Vaccine"

Moscow, Veterinariya, No 4, 1971, pp 43-45

Abstract: Comparative cytomorphological and cytohistochemical study of immunity production was conducted in gilts immunized with avirulent lapinized and cultural hog cholera virus vaccines (by inhalation and intramuscular injection). The lymph nodes, spleen, liver, lungs, and blood were examined at various times after vaccination. The various changes produced by the vaccines were most pronounced after 4 to 6 days: hyperemia in the lymph nodes, hyperplasia of the lymph follicles, and a sharp plasma cell reaction, especially in the regional lymph nodes and spleen (where the plasma cells increased 3- to 4-fold). The lymphocytes in the peripheral blood showed a similar increase. Biochemical analysis of the blood revealed marked changes in the serum proteins: sharp decrease in albumins and increase in the alpha- and gamma-globulins. All the animals were completely immune to cholera at this time. The cultural vaccine elicited the strongest and most prolonged immunomorphological response and confered the highest degree of immunity.

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USSR

UDC 619:616.981.452:636.4

KUSHNIR, A. T., BURTSEV, V. I., BONDARENKO, I. M., ZHOGOLEVA, S. P., SERGEYEV, V. A., FISENKO, O. F., ORLOV, V. A., and TROYAN, N. D., All Union Scientific Research Institute of Veterinary Virology and Microbiology

"Aerosol Vaccination of Swine Against Swine Fever"

Moscow, Veterinariya, No 10, Oct 70, pp 50-52

Abstract: Cultural vaccine prepared from the 31st passage of the lapinized K strain of swine fever virus in a culture of lamb testicular cells and concentrated 10-fold was highly immunogenic in gilts and piglets vaccinated by the aerosol method. Exposure of the animals for 5 minutes to vaccine diluted 1:1000 with physiological solution conferred stable immunity on 50% of the gilts and 100% of the piglets. Even in a dilution of 1:10,000, the vaccine produced immunity in a number of the animals. The immunizing dose (ImD_{50}) of the vaccine applied via aerosol was equivalent to 7.25 intramuscular ImD_{50} for gilts and 5.25 ImD_{50} for piglets. Clinical-hemoatological and biochemical studies of the vaccination process showed that the time at which the immunological reaction occurred and its intensity were the

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200510020-9"

USSR

KUSHNIR, A. T., et al, Veterinariya, No 10, Oct 70, pp 50-52

same, regardless of the method of vaccination. The degree of decrease in immunogenic activity of the vaccine in the process of atomization was less than 54.2% for one of the vaccines tested.

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1/2 023 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--RADIOISOTOPE RENOGRAPHY AS A METHOD OF DETERMINING THE RENAL FUNCTIONAL CONDITION IN SYSTEMIC LUPUS ERYTHEMATOSUS IN CHILDREN -U-

AUTHOR-(03)-KARTASHEVA, V.I., BURTSEV, V.I., FILATOV, A.A.

COUNTRY OF INFO--USSR

SOURCE--PEDIATRIYA 49(2): 54-58. ILLUS. 1970

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RADIOGRAPHY, PEDIATRICS, SKIN DISEASE, IODINE ISOTOPE, KIDNEY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0340 STEP NO--UR/0546/70/049/002/0054/0058

CIRC ACCESSION NO--AP0135031

UNCLASSIFIED

2/2 028 UNCLASSIFIED

CIRC ACCESSION NO--AP0135833 PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DATA OF RADIOISOTOPE RENOGRAPHY WITH THE AID OF HIPPURAN I PRIME131 IN 30 PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS AT THE AGE OF 7 TO 17 YR WERE GIVEN. RADIOISOTOPE RENOGRAPHY MAKES IT POSSIBLE TO REVEAL RENAL AFFECTION IN THE ABSENCE OF PATHOLOGICAL CHANGES OF THE URINARY TRACT. CHANGES IN A RENOGRAM ARE NOT PATHOGNOMIC FOR LUPUS NEPHROPATHY AND ARE SUCH IN OTHE BILATERAL INVOLVEMENT OF THE KIDNEYS. FACILITY: I. M. SECHENOV 1ST MOSCOW MED. INST., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 537.312.62

BURTSEV, V. T., YEFIMOV, Yu. V.

"An Investigation of Oxygen Content in Superconducting Compounds Based on Vanadium and Niobium"

Moscow, Sverkhprovodyashchiye splavy i soyedin.--sbornik (Superconductive Alloys and Compounds--collection of works), "Nauka", 1972, pp 63-69 (from RZh-Radiotekhnika, No 12, Dec 72, abstract No 12D565 [résumé])

Translation: The authors study the oxygen content in superconductive refractory compounds Nb_3Sn, V_3Ga and V_3Si and an alloy of vanadium with 25 at.% aluminum by the vacuum melting method. The auxiliary metal bath is selected, a study is made of the kinetics of liberation of carbon monoxide in the platinum carbide bath, and the sorption capacity of the condensate is evaluated in analysis of V_3Si. The compounds should be analyzed: 1) in a melt of nickel with 25 wt.% iron with a dilution of 1:10 in steel capsules with the addition of tin up to 10-12 wt.% of the bath weight at a temperature of 1650°C and extraction time of 7 minutes; specimen weight 0.3-0.4 G; number of specimens -- 4; 2) in a melt of platinum with dilution of 1:10 at 1920°C and extraction time of 7 minutes; specimen weight 0.1-0.15 G; number of specimens -- 5-6. Ill. 2, tabl. 3, bibl. 9.

1/1

USSR

UDC 669.787:541.8

ARTEMOV, V. I., BURTSEV, V. T., KASHIN, V. I., and SAKSONOVA, L. N., Moscow

"Investigation of the Solubility of Oxygen in Iron Carbide, Cobalt Carbide, and Nickel Carbide Melts"

Moscow, Izvestiya Akademii Nauk USSR, Metally, No 4, Jul/Aug 72, pp 25-31

Abstract: A study was made of the solubility of oxygen in Fe-C-O, Co-C-O, and Ni-C-O melts at 1950°C and P_{CO}=1 atm, in order to obtain thermodynamic parameters of the decarburization reaction applicable to electroslag, plasma, and electron-beam remelts. The method of the experiment, which prevented contact between the liquid metal and the refractory lining of the fusion crucible, particularly at higher C concentrations (0.04-5%), is described. Diagrams show the minimum oxygen solubilities of 0.0028% at 3%C for the Fe-C-O system, 0.0010% at 0.6% C for the Co-C-O system, and 0.0010% at 0.3% C for the Ni-C-O system. Values of K_p of the decarburization reaction were determined, and derived e_O^C values are compared with data from other authors.

Five illustrations, one table, twelve bibliographic references.

1/1

USSR

UDC: 621.745.5

KUCHERENKO, L. A., GLEBOVSKIY, V. G., and BURTSEV, V. T., Department of General Chemistry, Moscow State University

"Levitation Melting (Using an "Electromagnetic Crucible") for High-Temperature Reaction Studies"

Moscow, Vestnik Moskovskogo Universiteta, Series II, Khimiya, No. 6, Vol. 11, Nov-Dec 70, pp 700-704

Abstract: Experiments involving liquid metal desulfuration with slags by way of refractory magnesium oxide crucibles revealed slag saturation with up to 12% MgO. Dissolution of refractory magnesium oxide in the slag markedly decreased with temperature. Earlier studies have attempted to find methods for excluding the contact of refractory metals with the liquid phase or at least to reduce the contact to a minimum. All current methods proposed inferred the use of a refractory crucible which absolutely limited equilibrium studies in the metal-slag system. This study proposes

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USSR

KUCHERENKO, L. A., et al, Vestnik Moskovskogo Universiteta, Series II, Khimiya, No. 6, Vol. 11, Nov-Dec 70, pp 700-704

the use of an "electromagnetic crucible" or fluidized bed melting. This method of levitation melting features: lack of contact between liquid metal and slag, vigorous mixing of molten metal with slag, minimum time of reaching a given temperature (20-30 sec), and equilibrium in the complex system metal-slag-gas (2-3 min). The experimental equipment, specifications, and reaction are described. To preclude side reactions (such as gas conversion, metal or slag vaporization) the process must be conducted in a specific temperature range. In this study, use was also made of the method of levitation to analyze the relation between sulfur distribution factor L_s and the carbon content in iron in a carbon monoxide atmosphere. L_s values are calculated by thermodynamics.

2/2

USSR

UDC 621.385.6.01

BURTSEV, V.V., SILIN, R.A.

"Distinctive Features Of The Conditions For Synchronism Of Electrons With A Wave In Two-Dimensional--Periodic Retarding Systems Enclosed In A Cylinder"

Elektron.tekhnika. Nauch.-tekhn.sb. Elektron.SVCh (Electronics Technology. Scientific-Technical Collection. Microwave Electronics), 1971, Issue 7, pp 3-15 (from RZh--Elektronika i yeye primeneniye, No 11,Nov 1971, Abstract No 11A19)

Translation: The conditions are considered for synchronism of electrons with a wave in 2-dimensional--periodic retarding systems (RS) enclosed in a cylinder. It is shown that in the general case of electrons moving in an arbitrary direction relative to a series of arrays [reshetka] of the RS, synchronism conditions at any frequency in the passband of the system are realized at any velocity of the electrons, if only for one of the spatial harmonics. There exist, however, such directions of movement of the electron flow (e.g., along the series of arrays) where the synchronism conditions can be realized simultaneously for an infinite set of spatial harmonics. The conditions are studied for the existence of feedback in devices based on the use of RS enclosed in a cylinder. It is shown that irrespective of the type of dispersion characteristic, feedback exists if projections of the group velocity of the wave and the velocity of the electrons on the axis of the cylinder have an opposite sign. Summary.

1/1

USSR

UDC 539.376:66-974

STEPANOV, G. A., BURTSEV, YE. I., and KOROLIKHINA, R. A.

"Creep of Kh14G14N3T Steel in Liquid Nitrogen"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 3, 1971, pp 4-7

Abstract: The accumulation of plastic flow of Kh14G14N3T steel with a composition of 0.07% C, 0.46% Si, 0.006% S, 0.017% P, 13.4% M, 13.8% Cr, 3.05% Ni, and 0.25% Ti at -196° C was investigated under conditions of prolonged loading. Its properties in the presence of stress concentrators and heat-cooling cycles were also considered. The results of the tests shown that Kh14G14N3T can be recommended for statically loaded welded structural elements which must operate for a long time at low temperatures.

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USSR

UDC 539.376:66-974

STEPANOV, G. A., BURTSEV, YE. I., and KOROLIKHINA, R. A.

"Creep of Kh14G14N3T Steel in Liquid Nitrogen"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 3, 1971, pp 4-7

Abstract: The accumulation of plastic flow of Kh14G14N3T steel with a composition of 0.07% C, 0.46% Si, 0.006% S, 0.017% P, 13.4% M, 13.8% Cr, 3.05% Ni, and 0.25% Ti at -196° C was investigated under conditions of prolonged loading. Its properties in the presence of stress concentrators and heat-cooling cycles were also considered. The results of the tests shown that Kh14G14N3T can be recommended for statically loaded welded structural elements which must operate for a long time at low temperatures.

1/1

1/2 014 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--INFLUENCE OF THE VARIATIONS OF THE GEOMAGNETIC FIELD'S PERPENDICULAR COMPONENT ON READINGS OF A QUARTZ VARIOMETER -U-

AUTHOR-(02)-BOBROV, V.N., BURTSEV, YU.A.

B

COUNTRY OF INFO--USSR

SOURCE--GEOMAGNETIZM I AERONOMIIA, VOL. 10, NO. 2, 1970, P. 377-379

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--GEOMAGNETIC FIELD, GEOPHYSIC INSTRUMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0164 STEP NO--UR/0203/70/010/002/0377/0279

CIRC ACCESSION NO--AP0119160

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AP0119160
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION OF THEMAGNITUDE OF ERRORS WHICH CAN ARISE DUE TO FIELD VARIATIONS ORIENTED PERPENDICULARLY TO THE MEASURED FIELD COMPONENT AND TO THE SUSPENDED MAGNET'S AXIS OF ROTATION IN A HIGH SENSITIVITY QUARTZ VARIOMETER. A GRAPH OF THE NECESSARY CORRECTIONS FOR THE EFFECTS OF THE VARIATIONS IS GIVEN FOR VARIOMETERS WITH SCALE DIVISIONS OF 0.5, 1.0, AND 2.0 GAMMA-MM M. FORMULAS ARE GIVEN FOR THE EXPECTED ERROR AS A FUNCTION OF THEINSTRUMENT PARAMETERS ANDMAGNITUDE OF DISTURBING VARIATIONS. FACILITY: AKADEMIIA NAUK SSSR INSTITUT ZEMNOGO MAGNETIZMA, IONOSFERY I RASPROSTRANENIIA RADIOVOLN, KRASNAYA PAKHRA, USSR.

UNCLASSIFIED

1/3 010 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--A METHCD FOR REGISTRY OF MAGNETIC FIELD VARIATIONS -U-

AUTHOR--BURTSEV, YU.A.

B

CCUNTRY OF INFO--USSR

SOURCE--MOSCOW, GEOMAGNETIZM I AERONOMIYA, VOL X, NO 3, 1970, PP 561-562

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--GECMAGNETIC FIELD, MAGNET

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0522 STEP NO--UR/0203/70/010/003/0561/0562

CIRC ACCESSICN NO--AP0132718

UNCLASSIFIED

2/3 010 UNCLASSIFIED

CIRC ACCESSION NO--AP0132718 PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. VARIATIONS OF THE EARTH'S MAGNETIC FIELD ARE USUALLY REGISTERED USING VARIATION INSTRUMENTS WHOSE SENSING ELEMENT IS A PERMANENT MAGNET WITH A MIRROR, SUSPENDED ON AN ELASTIC FILAMENT AND ORIENTED IN SUCH A WAY THAT ITS MAGNETIC AXIS IS SITUATED PERPENDICULAR TO THE COMPONENT TO BE REGISTERED. THE ANGLE OF ROTATION OF THE SUSPENSION MAGNET IS DETERMINED BY THE EXPRESSION (SHOWN ON MICROFICHE), WHERE DELTA H SUB1 AND DELTA H SUB2 ARE THE VARIATIONS OF THE COMPONENTS REGISTERED AND DIRECTED ALONG THE MAGNETIC AXIS OF THE SUSPENSION MAGNET, EPSILON SUB0 AND EPSILON ARE THE VARIOMETER GRADUATIONS WHEN DELTA H SUB2 EQUALS 0 AND WITH ALLOWANCE FOR THE INFLUENCE OF DELTA H SUB2 RESPECTIVELY. THE SHORTCOMING OF REGISTRY OF VARIATIONS WITH A SINGLE VARIOMETER IS THAT WHEN WORKING WITH A VARIOMETER TUNED TO A SMALL EPSILON SUB0 VALUE THE NEED ARISES FOR TAKING INTO ACCOUNT THE EFFECT OF DELTA H SUB2, CONSIDERABLY COMPLICATING THE PROCESSING PROCESS. IN ORDER TO REDUCE THE VOLUME OF THE COMPUTATION WORK INVOLVED IN INTRODUCING A CORRECTION FOR THE INFLUENCE OF DELTA H SUB2, THIS ARTICLE DESCRIBES A NEW METHOD FOR THE REGISTRY OF PARAMETERS. ITS DISTINGUISHING CHARACTERISTIC IS THAT THE REGISTRY IS SIMULTANEOUS BY TWO VARIOMETERS OF THE SAME TYPE. THESE ARE SET UP IN SUCH A WAY THAT THE SUSPENSION MAGNETS OF THE FIRST AND SECOND VARIOMETERS ARE ORIENTED IN DIFFERENT DIRECTIONS. THE SAME DELTA H SUB2 VARIATION, INCREASING THE GRADUATION OF THE FIRST VARIOMETER, AT THE SAME TIME DECREASES THE GRADUATION OF THE SECOND.

UNCLASSIFIED

3/3 010 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132718

ABSTRACT/EXTRACT--THE MATERIAL PRESENTED IN THIS PAPER SHOWS THAT THE HALF SUM OF THE READINGS OF THE TWO VARIOMETERS WITH OPPOSITE ORIENTATION OF THE SUSPENSION MAGNETS DIFFERS FROM THE TRUE VALUE OF THE MEASURED PARAMETER BY 2PERCENT, WHEREAS THE READINGS OF EACH VARIOMETER SEPARATELY DIFFER BY 13 OR 17PERCENT, DEPENDING ON ORIENTATION.

FACILITY: INSTITUTE OF TERRESTRIAL MAGNETISM, IONOSPHERE AND RADIO WAVE PROPAGATION.

UNCLASSIFIED

USSR

UDC 621.311.001.1

BOLOTOV, V. V., ARTYUGINA, I. M., BURTSEVA, G. Ye., DOLGOV, P. P.

Voprosy teorii i metody proyektirovaniya energeticheskikh sistem (Problems of Theory and Methods of Power System Design), Leningrad, Nauka Press, 1970, 273 pp, ill., 1 r. 20 k. (from RZh-Elektrotekhnika i Energetika, No 4, Apr 71, Abstract No 4 Ye172 K)

Translation: Some problems of the theory and methods of technical-economic design of power systems are discussed. Basic attention is concentrated on analysis of the set of problems of modern development of power systems (construction of the power engineering balances, methods of calculating power reserves, development of the power system structure and the intersystem overhead electric power lines, and so on). The book is intended for a broad class of readers. There are 39 illustrations, 37 tables and a 52-entry bibliography.

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1/2 022 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--ACOUSTIC STUDY OF ROTATIONAL ISOMERISM IN A HOMOGENEOUS SERIES OF ACETATES -U-

AUTHOR--BURUNDUKOV, K.M.

B

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(4), 1107-9

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--ACOUSTIC ABSORPTION, ISOMER, ACETATE, ACOUSTIC FREQUENCY, ALKYL RADICAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0758 STEP NO--UR/0076/70/044/004/1107/1109

CIRC ACCESSION NO--AP0136195

UNCLASSIFIED

BURUSHKINA, T. N.

Life Support System

So: JPRS 53801
12 Aug 71

UDC 613.693:629.7.048.4:612.223.11]:661.183.124

AMINOSILICAGELS: REGENERABLE SORBENTS FOR ABSORBING CARBON HYDROGEN SULFIDE AND WATER VAPOR

[Article by I. A. Danilychev, V. V. Strelko, T. N. Buru[redacted], V. K. Cherkasov, S. L. Avetisyants and V. M. Men.[redacted], Kosmicheskaya Biologiya i Meditsina, Russian, Vol 5, No 3, 1971, pp 77-79, submitted 24 February 1969]

One of the principal requirements imposed on atmospheric purification systems in spaceships is the capacity for effectively absorbing carbon dioxide exhaled by man. The carbon dioxide adsorbents used are unregenerable chemical adsorbents of the type of different peroxide compounds of alkali metals and regenerable sorbents: synthetic zeolites (N. S. Torocheshnikov, et al.; Smylie and Reumont).

Although a system for air purification based on synthetic zeolites has been well developed, it has a number of serious inadequacies. In particular, the use of zeolites makes it necessary to use preliminary air drying to the dew point: 60-70°; considerable energy expenditures are required for the thermovacuum regeneration of synthetic zeolites.

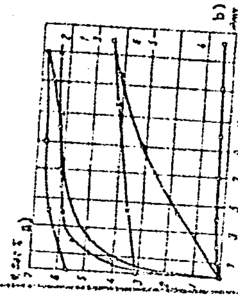

Fig. 1. Isotherms of CO_2 and H_2S adsorption and desorption on aminosilicagel. 1) isotherm of CO_2 adsorption; 2) isotherm of CO_2 desorption; 3) isotherm of CO_2 adsorption in presence of water vapor; 4) isotherm of CO_2 adsorption in control sample; 5) isotherm of H_2S in presence of water vapor; 6) isotherm of H_2S desorption. a) % by weight; b) P mm Hg.

- 119 -

2/2 022 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0136195
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SOUND ABSORPTION OBEYS THE EXPRESSION ALPHA-NU PRIME2 EQUALS B PLUS A-(1 PLUS (NU PRIME2 -NU SUBM PRIME2)), WHERE ALPHA IS THE ABSORPTION COEFF. AT THE FREQUENCY OF THE SOUND WAVE NU, AND NU SUBM THE RELAXATION FREQUENCY; A AND B ABSORPTION ... LESS THAN NU SUBM AND NU GREATER THAN NU SUBM, RESP. THE ACOUSTIC PARAMETERS IN ACOX (X EQUALS ME, ET, PR, BU, AND AMYL) CHANGE MONOTONICALLY WITH THE NO. OF ATOMS IN THE C SUBN H SUB2N POSITIVE 1 GROUP: B AND NU SUBM (5.7-22 MHZ) INCREASE AND A DECREASES. THE INCREASE OF NU SUBM IS DUE TO THE ACTIVATION ENERGY DECREASE WITH AN INCREASE IN THE NO. OF ATOMS IN THE C SUBN H SUB2N POSITIVE 1 GROUP. FACILITY: TYUMEN. GOS. PEDAGOG.-INST., TYUMEN, USSR.

UNCLASSIFIED

2

USSR

UDC 547.859.7'785.5:543.4.6

POZHARSKIY, A. F., KASHPAROV, I. S., ANDREICHIKOV, YU. P., BURYAK, A. I., KONSTANTINCHENKO, A. A., and SIMONOV, A. M., Rostov-on-Don State University

"Heterocyclic Analogs of Pleiadiene. VII. Tautomerism of 2-Amino-derivatives of Perimidine, Aceperimidine, and Their Imidazole Analogs"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 6, Jun 71, pp 807-813

Abstract: Analysis of the ionization constants, infrared and ultraviolet spectral data and of quantum mechanical calculations showed that 2-aminoperimidines and 2-aminoaceperimidines show a greater tendency toward a tautomeric equilibrium shift in the direction of the imino form than the 2-aminoderivatives of 4,5-diphenylimidazole, benzimidazole, and angular or linear naphtimidazoles. This tendency is believed to be connected with their π-electron structure.

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USSR

UDC 621.373.826:772.99

BURYAK, G. V., ZAVITNEVICH, Yu. V., MIROVITSKIY, D. I., NAZAROV, V. L., and SAMSONOV, G. A.

"Some Holographic Investigations of Light Dispersion With Models"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses--collection of works) "Nauka," 1972, pp 323-327 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10D417)

Translation: A holographic imitator of optical and infrared electronic systems, designed for studying the peculiarities of functional connections and set units, radio lines, and processes and phenomena occurring in radio systems, is described. The imitator contains a laser, a set of holographic or spatial models, a group of shaping and transforming optical elements, holographic imitators of range nonuniformities, and a receiver block. The peculiarities of the range over which the radio waves are propagated are modeled through a set of functional amplitude, phase, or complex filters. Results are given of the determination of dispersion diagrams for various objects for a signal path containing nonuniformities. A method is described which measures the dimensions of the object and the distance to it by forming a three-beam diagram of the radiation in which the direction of two beams are fixed while the third performs angular scanning to sense the contour of the investigated object. Bibliography of four [illegible]

1/2 021 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--PLASTICIZATION OF POLY(VINYL CHLORIDE) BY SULFOLANE ESTERS AND ETHERS -U-

AUTHOR-(05)-MOSHCHINSKAYA, N.K., BUDINSKAYA, N.N., BURYAK, I.P., BEZMENOVA, T.E., DOROFEYEVA, R.A.

COUNTRY OF INFO--USSR

B

SOURCE--PLAST. MASSY 1970, (2), 43-4

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PLASTICIZER, POLYVINYL CHLORIDE, ETHER, HETEROCYCLIC SULFUR COMPOUND, ACETATE, OPTIC PROPERTY, FROST RESISTANCE, ESTER/(U)S2 POLYVINYL CHLORIDE RESIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1703 STEP NO--UR/0191/70/000/002/0043/0044

CIRC ACCESSION NO--AP0112697

UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0112697

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POLY(VINYL CHLORIDE) RESIN S-2 (I) WAS PLASTICIZED WITH A NO. OF SULFOLANE ETHERS, E.G., 3,(NONYLOXY)SULFOLANE (II), 3,(DECYLOXY)SULFOLANE (III), SULFOLANE ETHERS PREPD. FROM A MIXT. OF C SUB9-18 ALCS., AND AN ESTER, OCTYL SULFOLANYLACETATE (IV), AT 80-90DEGREES AND AT 130-5DEGREES. I WAS BEST PLASTICIZED WITH 50 PARTS II OR III, WHEREAS OTHER SULFOLANE ETHERS AND IV WERE ONLY SLIGHTLY COMPATIBLE WITH I. THE PLASTICIZED I EXHIBITED SUPERIOR LIGHT AGING RESISTANCE, WEATHERABILITY, AND FREEZE RESISTANCE.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200510020-9"

USSR

UDC 66.099.2:661.635.213

KARMYSHOV, V. F., BURYAK, K. A., ZAYKOVSKIY, A. V., (DECEASED), BAYEV, A. YA., SAVCHENKO, V. A., and PERMINOVA, L. YA.

"Gruanulation of Ammophos by the Pressing Method"

Moscow, Khimicheskaya Promyshlennost', Vol 48, No 6, Jun 72, pp 434-436

Abstract: A method for the granulation of multipurpose fertilizers by the pressing method was developed at the Scientific Research Institute of Fertilizers and Insectofungicides imeni Ya. V. Samoylov. This method is being applied for the production of granulated ammophos/ammonium phosphate fertilizer/ at the Dzhambulsk Superphosphate Plant. Ammophos pulp with a 50% water content is subjected to spray drying. The dry powder is classified and then compressed to form plates. In the pressing stage 6.56 t/hr of powder (fresh + recycled material) yielded 4.08 t/hr plates and 2.48 t/hr of fine material that had the same granulometric composition as the initial ammophos and was fully recycled. Crushing of the plates resulted in a commerical granulated product with a grain size of 1-3 mm (2.27 t/hr from 4.08 t/hr plates), fine powder with a grain size $<$ 1 mm, that was recycled, and an oversize grain fraction that was reground. One of the principal problems in connection with the process is formation of a large amount of fine material that has to be recycled. Formation of fine material in the amount of 37.8%

USSR

KARMYSHOV, V. F., et al., Khimicheskaya Promyshlennost', Vol 48, No 6, Jun 72, pp 434-436

in the pressing stage is due principally to the porous structure of the powder being compressed, which contains only 30% of solids, and its high air content. The air contained in the powder interferes with feeding of the powder into the space between the rollers, producing spraying of the powder. It also reduces the adhesion between powder particles. To obtain a lower ratio of fine material that has to be recycled, methods must be developed for reducing the amount of air in the powder.

USSR

UDC 539.3

ALEKSANDROV, V. M., BURYAK, V. G., Rostov-na-Donu, Voroshilovgrad

"Dynamic Mixed Problem of Pure Shear for an Elastic Halfspace"

Kiev, Prikladnaya Mekhanika, Vol VII, No 4, 1971, pp 16-22

Abstract: A study is made of the dynamic problem of pure shear of an isotropic elastic halfspace by a nondeformable strip loaded along its generatrix by a shearing force reduced to a unit length. Complete contact between the surfaces of the strip and the halfspace is assumed. Asymptotic solutions are found to the problem for large and small values of the relative frequency. These solutions interlock in a significant range of variation of the relative frequency, insuring complete and effective investigation of all basic characteristics of the problem. Numerical results and graphs are presented.

The methods of operation calculus are used to reduce the problem to integral equation form. Formulas are also presented for calculating the phase shift angle and modulus of the complex amplitude of the strip oscillations.

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USSR

UDC 615.31:547.861.37-012.1

PIS'KO, G. T., NEVSKAYA, T. L., GANUSHCHAK, N. I., BURYAK, V. S., BRUZDEV, A. I., KOSUBA, R. B., KUCHER, V. I., Chernovitskiy Medical Institute

"Synthesis and Pharmacologic Properties of New Derivatives of Piperidine"

Moscow, Khimiko--Farmatsevticheskiy Zhurnal, No 4, 1973, pp 14-17

Abstract: As a result of studying the relation between chemical structure and biological activity in a series of quaternary ammonia compounds, it was concluded [G. T. Pis'ko, "Chromotologic Properties Antimicrobic Effect of Derivatives of Ethylene- and Hexamethylemediamine," Doctor's Dissertation, Chernotsy Dnepropetrovsk, 1965; Farmakol o toksikol, No 5, 1970] that the basic role in the antimicrobic effect of these compounds belongs to the high-molecular alcohol radical which is joined by the ester bond to the quaternary nitrogen atom. A study was made of the synthesis and pharmacological properties of some new derivatives of piperidine containing high-molecular alcohol radicals. For synthesis of N-(4-phenyl-3-methylputene-2-yl-1)-N--carbalkoxymethyl piperidinium chlorides (I-X), the interaction of N-aryl-butenyl derivatives of pure piperidine and esters of monochloroacetic acid were used. On heating in dry diethyl ether, stable, highly water soluble compounds I-X were obtained with good yields.
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USSR

PIS'KO, G. T., et al., khimiko-Farmatsevticheskiy Zhurnal, No 4, 1973, pp 14-17

The general effect and toxicity of the compounds were studied on white rats and white mice on intraperitoneal administration. The effects of the compounds on the arterial pressure, respiration and tonus of the third eyelid was studied in acute experiments on cats. Other experiments and the results are described. In studying the antimicrobic properties of the compounds the most sensitive turned out to be staphylococcus aureus and Candida albican fungus. The least sensitive were Vacilous coli, Proteus vulgaris Pseudomas Pyocyanea. When studying the relation between the chemical structure and the antimicrobic effect it was found that the activity appears for $R = 1CH_3$; then gradually increases and the maximum effect is observed for $R = C_9H_{19}$.

2/2

USSR

UDC 615.31:547.822

HANUSHCHAK, N. I., FIS'KO, G. T., DUBYAK, V. S., KUCHER, V. I., NIKOLAYCHUK, N. A., KARINKOVSKAYA, R. B., NEVSKAYA, T. L. and ZAPOROZHETS, V. I.; Chernovtsy University

"Synthesis and Certain Biological Properties of Piperidins Derivatives"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 5, No 9, 1971, pp 8-11

Abstract: Piperidins derivatives have a wide range of biological action, and many of them are now used in medical practice. However, the biological action depends largely upon the nature of the substitutes introduced, both at the nitrogen atom, and at the carbon atoms of the peridine ring. Meanwhile, those compounds substituted with fatty-aromatic radicals at the nitrogen atom which have multiple carbon-carbon bonds have been very little studied. The authors studied 23 members of this group to determine their biological action on test animals (cats, white mice), and to determine basic physico-chemical properties. Increased toxicity, effect on blood pressure, and strengthened heart movements were observed in many cases. Data obtained are summarized in tabular form.

1/1

USSR

UDC: 621.372.837

BURYAK, V. S. and KOZYREV, Ye. N.

"Antenna Switch in a Circular Waveguide with an H_{01} Wave"

Kiev, Izvestiya VUZ-Radioelektronika, Vol 14, No 1, 1971, pp 56-60

Abstract: A broad-band gas-discharge antenna switch whose operation under receiving conditions is based on the characteristics of a directional coupler with complete coupling is examined in this paper. The switch is in a circular waveguide using an H_{01} wave. Two concentric metal tubes make up the waveguide system with the smaller in diameter of the two as the basic channel for the switch. This waveguide has a circular aperture which accommodates a discharger. A diagram of the system showing the connections of the receiver and transmitter into the waveguides is shown. Design equations for the device are derived. The calculations indicate that the frequency bandwidth during reception, for a loss level of 0.3 dB, may exceed 15% of the middle frequency. Although this method for computing the antenna switch does not take into account the losses in the dielectric envelope of the discharger, these losses can be neglected if the wall accomodating the discharger is thin and if its length is small.

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USSR

UDC 669.187.26

ZABALUYEV, YU. I., MOSHKEVICH, YE. I., BURYAKOVSKIY, G. A., BRODSKIY, G. M., and NIKULIN, A. A., Dneprospetsstal' Plant and All-Union Scientific Research Institute of Electric Welding Equipment

"Improving the Quality of Electroslag Remelted Steel by the Action of a Magnetic Field"

Moscow, Stal', No 8, Aug 73, pp 710-711

Abstract: The effectiveness of electroslag remelting of large ingots is lowered due to the development of segregation phenomena (formation of "barbs" in the macrostructure, etc.). Reducing the remelting rate eliminates this defect but causes deterioration of surface quality and, therefore, is permissible only in narrow limits. Electromagnetic action with the aid of a solenoid makes it possible to eliminate segregation defects and to produce metal of satisfactory quality even with a slight increase in the remelting rate. Comparative data on the quality of steels ShKh15SGSh and ShKh15Sh are presented in which remelting was done in the same modes in a crystallizer measuring 415 x 415 mm with and without the solenoid. M. N. KUZNETSOV, N. A. STETSENKO, L. P. BULYSHENSKAYA, and S. S. KAZAKOV participated in this work. Two bibliographic references.
1/1

BUR'YAN, Yu.A.

Gyros

GYROS: HEADING INDICATOR AND COMPASS EFFECT

JPRS 57260

17 October 1972

Selected translations from the Russian-language periodical Izvestiya VUZ Priborostroyeniye, No 7, 1972, Leningrad, pp 53-93.

CONTENTS

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Synthesizing a Gyromagnetic Heading Indicator
(Yu. A. Bur'yan) 1

Compass Effect of a Gyro With Forced Rotation of the Global Mount
(L.I. Korzu, V.A. Yablonskaya) 9

Acc. Nr: AP0043733 Abstracting Service: 5/70 Ref. Code: INTERNAT. AEROSPACE ABST. UR0226

A70-23123 # **Soldering of the boron carbonitride with high melting-point metals (Paika karbonitrida bora s tugoplavkimi metallami).** G. G. Archakova, A. I. Burykina, O. V. Evtushenko, and E. M. Prshedromirskaia (Akademiia Nauk Ukrainskoi SSR, Institut Problem Materialovedenija, Kiev, Ukrainian SSR). *Poroshkovaia Metallurgiia*, vol. 10, Jan. 1970, p. 52-55. In Russian.

Development of a high-temperature soldering technique for soldering the boron carbonitride with the niobium, molybdenum and tungsten, using the molybdenum disilicide as a solder. A study is made of the electrical resistance and gas tightness up to 10 atm of this soldered joints.

Z.W.

ALS

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REEL/FRAME
19770139

18

Powder Metallurgy

USSR

UDC 669.018.4:669.78'6'2:669.295:541.118

BURYKINA, A. L., and KOSTERUK, V. P., Institute of Problems of Material Sciences, Academy of Sciences UkrSSR

"Study of the Influence of the External Medium on the Interaction of Silicon Nitride with Titanium"

Kiev, Poroshkovaya Metallurgiya, No 12, Dec 73, pp 49-54

Abstract: The interaction of compact silicon nitride and titanium is studied under a vacuum of $2 \cdot 10^{-5}$ mm Hg and in a medium of helium with a gauge pressure of 0.5 atm, and the interaction is also studied upon hot pressing of mixtures of the powders in the 1200-1600° C interval. It is established that, depending on experimental conditions, the reaction products are: titanium nitride and silicon, titanium silicides Ti_5Si_3, $TiSi_2$ or a mixture of the nitride and silicide phases. Reducing the pressure and intensifying mass exchange with the surrounding medium, like an increase in temperature, decreases the content of titanium in the reaction products. Hot pressing of mixtures of powders produces titanium nitride and silicon. The data produced agree satisfactorily with the thermodynamic analysis presented.

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USSR

UDC 621.763:669.01

KARPINOS, D. M., FEDORENKO, V. K., BURYKINA, A. L., and GORSKIY, V. V., Institute of Problems of Material Science, Academy of Sciences UkrSSR, Institute of Metal Physics, Academy of Sciences UkrSSR

"Study of Interactions at the Phase Division Boundary in Composite Materials with a Nichrome Matrix and Fibers Based on Tungsten and Molybdenum"

Kiev, Poroshkovaya Metallurgiya, No 2, Feb 74, pp 64-75

Abstract: This work studies the structure and phase composition of the transition zones, determination of the mechanism and kinetics of growth of interaction zones, the influence of alloy elements in the fiber and matrix on the mechanism and kinetics, the study of recrystallization in the fibers and determination of the influence of all these factors on some of the strength characteristics of fiber-reinforced materials. It is established that the phase composition of the reaction zone does not influence the quantitative relationships of layer growth. The kinetics of diffusion processes in the system studied correspond to a vacancy mechanism. The alloying elements in the fiber and matrix have

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USSR

KARPINOS, D. M., et al., Poroshkovaya Metallurgiya, No 2, Feb 74, pp 64-75

a significant influence on the parameters of layer growth. The diffusion of nickel and chromium in the fiber is rapid. Recrystallization phenomena in fibers represent one of the main causes of the reduction in strength of fiber reinforced materials during long-term operation.

2/2

USSR

UDC 546.27'17:541.121.16

SAMSONOV, G. V., BURYKINA, A. L., MEDVEDEVA, O. A., and KOSTERUK, V. P., Institute of Problems of Material Sciences, Academy of Sciences UkrSSR

"Interaction of Boron Nitride with Transition Metals, Their Borides and Nitrides"

Kiev, Poroshkovaya Metallurgiya, No 11(131), Nov 73, pp 50-57

Abstract: An experimental study was made of the interaction of boron nitride with titanium, zirconium, hafnium, and with zirconium nitride and boride during hot-pressing of the powder mixture in the 1200-2000° C temperature interval. The results are discussed by reference to microstructures of hot-pressed specimens of the Ti-BN, ZrN-BN, Hf-BN, and ZrB_2-BN systems. During interaction of boron nitride with metals, a mixture of nitride and boride phases of metals develops during which, with rising temperatures, the content of the metal nitride decreases. The interaction of boron nitride with zirconium nitride results in the formation of zirconium diboride at 2000° C. At this temperature, boron nitride does not interact with diborides of transition metals. Boron nitride is recommended for works in contact with refractory metals of group IV at up to 1200° C. Composites of diborides of transition

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200510020-9"

USSR

SAMSONOV, G. V., et al., Poroshkovaya Metallurgiya, No 11(131), Nov 73, pp 50-57

metals with boron nitride can be used at up to 2000° C. Six figures, one table, six formulas, 20 bibliographic reference.

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USSR

UDC 669.018.95

BURYKINA, A. L., DZYADYKEVICH, YU. V., GORSKIY, V. V., Institute of Problems of Material Sciences, Academy of Sciences Ukrainian SSR and Institute of Metal Physics, Academy of Sciences Ukrainian SSR

"Izvestigation of the Stability of B-Ti and SiC-Ti Composites During Extended Vacuum Heating"

Kiev, Poroshkovaya Metallurgiya, No 9, Sep 73, pp 74-76

Abstract: The interactions of B-Ti and SiC-Ti composites were studied at 900°C in a vacuum for periods extending up to as much as 300 hours. For the titanium-boron fiber composite it was established that annealing for longer than 50 hours causes a diffusion zone to be formed with a thickness up to 5 microns, and, for a period longer than 100 hours, characteristic formations in the form of a "solar corona" appear in the structure of the layer. Data from micro-x-ray spectral analysis for a 300-hour anneal show that a rich-boron phase is formed which is very close in composition to TiB_2. A silicon carbide fiber also reacts with the titanium matrix at 900°C and 300 hours with the formation of two annular zones very close in composition and close to the composition of titanium silicide Ti_3Si. At higher temperatures a phase rich with silicon -- Ti_5Si_3 is formed. 3 figures, 4 bibliographic references.
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USSR

B

ARCHAKOVA, G. G., BURYKINA, A. L., YEVTUSHENKO, O. V., and PRSHEDROMIRSKAYA, YE. M., Institute for Problems of Material Science, Academy of Sciences UkrSSR

"Soldering of Carbonitride With Refractory Metals"

Kiev, Academy of Sciences Ukr SSR, Poroshkovaya Metallurgiya, No 1, Jan 70, pp 52-55

Abstract: A method was developed for boron carbonitride soldering with refractory metals (niobium, molybdenum, and tungsten) using molybdenum disilicide as a refractory solder. In contrast to a previously developed soldering technique in an induction furnace in an argon medium, the soldering was accomplished in a vacuum. In certain cases a molybdenum powder (5 to 7%) was added to the refractory solder in order to decrease the temperature. A schematic diagram of the soldering setup is given and the soldering technique is described. Microstructure photographs of different fusion samples are given, and data on the electrical resistance of soldered boron carbonitrides with three metals are presented. The gas permeability of samples with pressure drops up to 10 atm was investigated. The experimental setup is shown schematically. The results obtained show that the soldering technique ensures the conservation of the electric resistance of

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USSR

ARCHAKOVA, G. G., et al, Poroshkovaya Metallurgiya, No 1, Jan 70, pp 52-55

soldered elements within the limits of 10^{13} ohm/cm and a gas density of the soldered elements from 1 to 10 atm. Orig. art. has: 3 figures, 2 tables, and 2 references.

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USSR

UDC 669.018.95

BURYKINA, A. L., DZYADYKEVICH, Yu. V., and GORSKIY, V. V., Institute of Problems of Material Science, Academy of Sciences UkrSSR, Institute of Physics of Metals, Academy of Sciences UkrSSR

"Investigation of the Compatibility of Boron Fibers With Tungsten Substrate and Titanium Matrix"

Kiev, Poroshkovaya Metallurgiya, No 11 (119), Nov 72, pp 48-53

Abstract: The reaction of boron fibers with a tungsten core was investigated at 1100°C and with a titanium matrix at 900, 1000, 1100, and 1300°C and 1, 3, 5, and 10 hrs of aging in a vacuum of $1 \cdot 10^{-4}$ mm Hg. Metallographic methods, x-ray phase and x-ray microspectral analysis, and microhardness measurements were used for the investigation. It was established that the boron fiber reacts with the tungsten substrate at 1100°C to form the higher tungsten borides WB_4 and, probably, WB_{12}. Boron fiber is stable in a titanium matrix up to 900°C; at higher temperatures, titanium borides Ti_2B and TiB are formed as a result of unipolar diffusion of boron into titanium. A comparison of results with data of other authors indicates that in the composition boron fiber - titanium matrix at 900°C a diffusion zone develops over a period of 100 hrs which has the same thickness as in

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200510020-9"

USSR

BURYKINA, A. L., et al., Poroshkovaya Metallurgiya, No 11 (119), Nov 72, pp 48-53

a nickel matrix at 700°C at the same heating duration. Four figures, one table, thirteen bibliographic references.

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USSR

LETAVET, A. A., and BURYKINA, L. N., Editors, Academy of Sciences USSR

"Materials on the Toxicology of Radioactive Substances"

Materialy po toksikologii radioaktivnykh veshchestv [English version above], Moscow, Meditsina, Vyp. 8, 1972, pp 248, illustrations, 1 ruble 29 kopecks (from Referativnyy Zhurnal -- Biologicheskaya Khimiya, No 5, 1973, Abstract No 5F2297K by D. G.)

Translation: This collection presents data on the kinetics of ^{131}I metabolism in the organisms of experimental animals as influenced by their age and previous total body irradiation, and on the biological effects of ^{131}I (including effects on the nervous, cardiovascular, generative, hemopoietic and other systems, iodine uptake by the thyroid gland, and toxic effects on the embryo.

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USSR UDC: 537.312.62

BURYLEV, B. P., VASIL'YEV, V. V.

"On the Thermodynamics of Superconducting Materials Based on Refractory Metals of Group V"

V sb. Probl. sverkhprovodyashch. materialov (Problems of Superconducting Materials--collection of works), Moscow, "Nauka", 1970, pp 51-64 (from RZh--Radiotekhnika, No 5, May 71, Abstract No 5D557)

Translation: The energies of interchange of vanadium, niobium and tantalum with eighty elements of the periodic table are calculated, giving semiquantitative data on the nature of interaction of refractory metals of group V with various metals and metalloids. The parameters of interparticle interaction are determined from the region of immiscibility on the phase diagram for the systems Nb-Sn, Nb-Zr, Nb-U, Nb-Y and also Ta-Y and V-Y. It is shown that various properties of binary and multicomponent systems based on vanadium, niobium and tantalum can be calculated: vapor pressure, density, atomic volume, coefficient of diffusion, viscosity, etc. One illustration, three tables, bibliography of forty titles. Resumé.

1/1

USSR UDC 669.018.4+537.312.62+541.12.3.2

BURYLEV, B. P., and VASIL'YEV, V. V.

"The Thermodynamics of Superconducting Materials Based on Group V Refractory Metals"

Problemy Sverkhprovodyashchikh Materialov [Problems of Superconducting Materials -- Collection of Works], Moscow, Nauka Press, 1970, pp 51-64

Translation: The interchange energy of vanadium, niobium, and tantalum with 80 elements of the periodic table are calculated and used to produce semi-quantitative data on the nature of the interaction of group V refractory metals with various metals and metalloids. The parameters of the interparticle interaction are determined from the area of imiscibility on the state diagram for the systems Nb-Sn, Nb-Zr, Nb-U, Nb-Y, Ta-Y and V-Y.

The possibility is demonstrated of calculating various properties of binary and multicomponent systems based on vanadium, niobium, and tantalum: vapor pressure, density, atomic volume, diffusion coefficients, viscosity, etc.

1 figure; 3 tables; 40 biblio refs.

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USSR

UDC 621.762.012.5

KIPARISOV, S. S., NARVA, V. K., and BURYMOVA, T. M., Moscow Institute of Steel and Alloys; Chair of Rare, Radioactive Metals and Powder Metallurgy

"Production and Properties of Materials Using Titanium Carbide"

Ordzhonikidze, Tsvetnaya Metallurgiya, No 2, 1973, pp 153-155

Abstract: Investigation results are presented of the production conditions and of the properties of materials incorporating TiC (30-80 wt%) and the bond of the Ni-Cr-Mo alloy. The hardness of the materials (30-80 wt% TiC) after aging and heat treatment, their mechanical properties at room temperature and at 800°, the increase in weight with oxidation, and the antifriction properties of the materials (30-50 wt% TiC) are discussed by reference to experimental data. Baked materials, containing titanium carbide and Ni alloy of complex composition, were found capable of being subjected to heat treatment, after which their hardness is 60-73 HRC. The materials retain high strength and hardness up to 500-550°, and they possess good wear resistance and high heat resistance at 600-1000°. Their oxidation proceeds according to the logarithmic rule. One figure, four tables, six bibliographic references.

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USSR

UDC 632.95.028

BURYY, V. S., GOSHKA, A. T., KUDEVICH, S. N., SANNIKOV, G. P., and GUBAREVA, K. P., All Union Scientific Research Institute of Hygiene and Toxicology of Pesticides, Polymers, and Plastic Masses, and Northern Scientific Research Institute of the Hydrotechnology and Development

"Residues of Herbicides Used in Clearance of Canals Found in Outside Environment"

Moscow, Khimiya, s Sel'skom Khozyaystve, Vol 10, No 9 (119), 1973, pp 48-54

Abstract: Canal characteristics are reported and the effectiveness of granulated herbicides monuron, diuron, and symazine against water plants. The residue of these preparations was studied in water and in soil at various distances from he site of introduction, as well as in plants and fish. It has been established that monuron is the most promising herbicide for the utilization in the zone of non-black soil considering the aspects of the sanitation-hygienic evaluation and the phytotoxic properties.

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BIOLOGY
Agriculture

USSR

BURYY, V. S., and PAN'SHINA, T. N.

"Herbicides"

Moscow, Zdorov'ye, No 2, 1971, pp 28-29

Abstract: Following a description of the properties of the main classes of herbicides authorized for sale in the USSR, their degree of toxicity, and symptoms of poisoning they produce upon inhalation or ingestion, the authors outline a series of steps that must be taken to safeguard those whose jobs require regular handling of the chemicals and those who may want to use them in private gardens and orchards. These steps are set forth in detail in the official publication Sanitarnyye pravila khraneniya, transportirovki i primeneniya yadokhimikatov v sel' skom khozyaystve (Sanitary Regulations for the Storage, Transport, and Use of Toxic Chemicals in Agriculture).

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UDC 612.825.54-05

SHUMILINA, A. I. and BURZA, Zh. B., Institute of Normal and Pathological Physiology, Academy of Medical Sciences USSR, and First Moscow Medical Institute imeni I. M. Sechenov

"Late Reactions of the Visual Cortex to the Convergence of Light and Electrical Stimulation"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 2, 1973, pp 3-5

Abstract: Rabbits with chronically implanted electrodes in different brain structures were exposed to light flashes and, simultaneously or at various intervals thereafter, electrical stimulation (10 to 15 v) of the hind paw. The effect of electrical skin stimulation on evoked potential of the visual cortex and hippocampus, reticular formation, etc. varied with the current intensity and length of time following the light flashes. For example, subthreshold stimulation, sufficient to suppress the late slow oscillations (8 to 10 v), facilitated the positive phase of the primary response and irregularly facilitated the secondary positive oscillations. Intensification of the current inhibited the generation of the late slow oscillations but facilitated the primary response and secondary positive oscillations in most cases. The critical interval between the stimuli required to free the late slow oscillations from the inhibitory effect of skin stimulation was 75 to 100 msec, i.e., the period encoding 1/2

USSR

SHUMILINA, A. I. and BURZA, Zh. B., Byulleten' Eksperimental'noy Biologii i Meditsiny, No 2, 1973, pp 3-5

the latency of the late slow response. Thus, the interaction of the visual and cutaneous stimuli suppressed the late slow oscillations of evoked potentials when the current was applied during the latency of the late response regardless of whether it represented the inhibitory or excitatory phase of the potential evoked by light. Cutaneous stimulation had the opposite effect on the primary and secondary positive oscillations, i.e., it facilitated them.

USSR

UDC 621.313.29:538.4

BURZVALK, Yu. A.

"Conduction Liquid Metal dc MHD Pumps"

Magnitnaya Gidrodinamika, No 2, 1971, pp 75-87.

ABSTRACT: A review is presented of the contemporary state and prospects for development of dc conduction liquid metal MHD pumps. Following a brief analysis of the history of the problem, the general form of equations for currents in the pump channel is presented. Considerations are presented on the hydraulic design of pumps, in particular on consideration of the influence of the magnetic field on flow. The basic types of pumps are described. The principles of optimization of pumps are studied; it is demonstrated that the conditions $\partial\eta/\partial p = 0$ and $\partial\eta/\partial Q = 0$ where $p = p_n$, $Q = Q_n$ are not characteristic for designs having $\eta = \eta_{max}$. Experimental results and possible prospects for the application of conduction MHD machines are studied. Unsolved problems are listed.

1/1

USSR UDC 620.17:539.562:669.7

BANNYKH, O. A., BUSALOV, YU. YE., KLEKOVKIN, A. A., KOP'YEV, I. M., and PROKOF'YEV, D. I., Institute of Metallurgy imeni A. A. Baykov

"High-Strength Wires for Reinforcement of Light Alloys"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 7, 1973, pp 40-45

Abstract: A study was made of the mechanical properties, depending on tempering temperature and time, of high-strength wires from steels of industrial melts: U8A carbon steel (1), VNS9(2Kh15N5AM3) austenitic martensite steel (2), MS200(N18K9M5T) martensite-aging steel (3), EP322(OKh14N14M1) austenite steel (4), and an aging alloy based on Fe-Co-Ni-Cr (40KNKhMVTYu) (5). X-ray structural analysis revealed that the loss of strength of the wire at increasing tempering tempreature is generally determined by processes of recovery in cold-deformed martensite, the development of $\alpha(M) \rightarrow \gamma$ transformation, and also by coagulation of particles of excess phases. Wires of steel (1) weakened at temperatures $> 300^{\circ}C$, of steels (2), (3), and (4) - at temperatures $> 500^{\circ}C$, and of (5) - at tempetatures $> 650^{\circ}C$. The selection of the technology for producing a light alloy-wire composite depends on the loss-of-strength temperature of the wire. A liquid-phase technology can be applied in strengthening with

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USSR

BANNYKH, O. A., et al., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 7, 1973, pp 40-45

fibers of alloy (5). In strengthening wires of alloy steels (2), (3), and (4), only solid-phase methods with heating $\leqslant 500^{\circ}C$ can be applied, and only short-duration heating $< 300^{\circ}C$ can be applied for composites strengtened by steel (1) wires. Three figures, two tables.

2/2

USSR UDC 669.71:539.4

IVANOVA, V. S., KON'YEV, I. M., BUSALOV, YU. YE., and YERMISHKIN, V. A., Moscow

"Deformation and Rupture Characteristics of Composite Materials With Work Hardenable and Slightly Work Hardenable Matrix"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 3, May/Jun 73, pp 116-121

Abstract: Resistance to deformation and rupture of an Mg-li (8 wt% Li) alloy reinforced with U8A steel wire was studied by a stepwise loading method. When the amount of steel wire was 1 volumetric percent, the Mg-Li alloy behaved as a matrix, but when the amount of steel wire was increased to 8-15% the behavior of the alloy was typical for metals with a body-centered cubic lattice. In other words, steel wire (fibers) determined the properties of the alloy. A generalized rupture scheme of the composite material is suggested together with the mechanical rheological model of the material behavior, taking into account the matrix deformation properties. Application of the additivity rule for computation of the parabolic strengthening coefficient of the composite material based on a nonhardenable matrix during deformation makes it possible to plot actual deformation curves of composite materials with different volumetric percentage of matrix. Using the deformation diagrams of the matrix

USSR

IVANOVA, V. S., KON'YEV, I.M., BUSALOV, YU. YE., and YERMISHKIN, V.A., Moscow Fizika i Khimiya Obrabotki Materialov, No 3, May/Jun 73, pp 116-121

fibers and composite material plotted in actual coordinates, it is possible to predict the nature of the fiber rupture and to determine the local deformation within its rupture zone. The parabolic strengthening coefficient, like the elasticity modulus, obeys the additivity rule for composite materials with a low-hardenable matrix.

2/2

USSR B UDC 669.71:621.762

~~BUSALOV, YU. YE.~~ KOP'YEV, I. M., Moscow

"Ceramics Reinforced With Metallic Fiber: a Survey"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 1, Jan-Feb 70, pp 57-69

Abstract: Composite materials possessing the best qualities of ceramics (heat-resistance, corrosion-resistance, etc.) and metals (tensile strength, etc.) would offer great structural advantages. The authors reviewed the published data on the physical and chemical properties of (metal) fiber-reinforced ceramics. It is concluded that: 1) at least in principle a satisfactory metal-fiber - ceramic combination can be developed, the most promising fibers being of continuous, net or ribbon type; 2) the maximal volumetric proportion of metallic fiber is about 30-40%; 3) reinforcement of this sort greatly improves the quality of the matrix; in particular, impact toughness and thermal shock resistance; and 4) promising compositions are found in pure Al_2O_3, SiO_2, SiC, mullite and mullite-Al_2O_3 mixtures (58.5% and 41.5%), reinforced with molybdenum and niobium.

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1/2 014 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--MECHANISM OF THE EFFECT OF HEAVY WATER ON THE VISCOSITY OF STARCH SOLUTIONS -U-

AUTHOR-(03)-KRETOVICH, V.L., ZOTOVA, N.N., BUSAREVA, N.N.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(6), 1480-2

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HEAVY WATER, STARCH, FLUID VISCOSITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1100 STEP NO--UR/0020/70/190/006/1480/1482

CIRC ACCESSION NO--AT0119959

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AT0119959

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. VISCOSITY DATA ARE REPORTED FOR SOLNS. OF STARCH THAT HAD BEEN FORMED INTO PASTE WITH H SUB2 O AND D SUB2 O WITH AND WITHOUT ADDED UREA AT 100DEGREES. THE FORMATION OF PASTE WITH D SUB2 O TENDS TO DENSIFY THE MICELLES AND LOWERS THE VISCOSITY OF THE PASTE. THE RELATIVE VISCOSITY OF PLATE FROM CORNSTARCH INCREASED GREATLY IN CONTACT WITH UREA IN BOTH H SUB2 O AND D SUB2 O. UREA HAD LITTLE EFFECT IN THIS RESPECT ON POTATO STARCH PREPD. IN PASTE FORM IN H SUB2 O, BUT IN D SUB2 O A LARGE INCREASE IN VICSOCITY AFTER CONTACT WITH UREA WAS AGAIN NOTED. HYDRODYNAMIC VOLS. OF MICELLES OF THESE STARCHES WERE DETD. AND TABULATED UNDER THE ABOVE CONDITIONS. IT WAS SHOWN THAT D SUB2 O LOWERS THE SPECIFIC HYDRODYNAMIC VOL. OF THE STARCH MICELLES. THIS IS CAUSED BY GREATED STABILITY OF BONDS FORMED BY D, GREATER COMPACTNESS OF THE MICELLES, AND GREATER DIFFICULTY OF PENETRATION OF H SUB2 O INTO SUCH MICELLES. THE MICELLES OF PASTE FROM CORNSTARCH ARE THUS MUCH MORE DENSE THAN THOSE FROM POTATO STARCH. THE LATTER STARCH, HOWEVER, HAS MUCH WEAKER H BONDS AND A LESS TIGHTLY BONDED MICELLE FORM. FACILITY: MOSK. TEKHNOL. INST. PISHCH. PROM., MOSCOW, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200510020-9"

1/2 040 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--ALUMINUM ALLOYS FOR CAST PISTONS -U-

AUTHOR-(04)-BUSAROV, V.M., KIRILLOV, M.I., AMOSOV, V.N., ARSHINOV, V.D.

COUNTRY OF INFO--USSR

B

SOURCE--BRIT. 1,180,880

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, PROPULSION AND FUELS

TOPIC TAGS--ALUMINUM ALLOY, CHEMICAL COMPOSITION, CHEMICAL PATENT, METAL CASTING, HEAT RESISTANT METAL, HARDNESS, METAL SOLID SOLUTION, TENSILE STRENGTH, FATIGUE STRENGTH, INTERNAL COMBUSTION ENGINE COMPONENT, PISTON ENGINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/0215 STEP NO--UK/0000/70/000/000/0000/0000

CIRC ACCESSION NO--AA0100739

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200510020-9"

2/2 . 040 UNCLASSIFIED PROCESSING DATE--18SEP70
CIRC ACCESSION NO--AA0100739
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AL CASTING ALLOYS HAVING HIGHER STRENGTH AT 300DEGREES AND LOWER COEFF. OF EXPANSION THAN OTHER AL BASE ALLOYS FOR PISTONS CONTG. 15-19PERCENT SI, CONTAIN SI 20-2, CU 2.2-3, NI 2.2-2.8, MG 0.2-0.5, MN AND CR EACH 0.2-0.4,TI 0.1-0.3, AND FE 0-0.9PERCENT. THE MELT SHOULD BE INOCULATED WITH A P COMPD., REFINED WITH CL OR CHLORIDE AT 700-850DEGREES, AND CAST AT 780-850DEGREES. CU, NI, AND CR COMPDS. INCREASE THE HEAT RESISTANCE, MN IMPROVES THE STABILITY OF THE AL SOLID SOLN., AND CR AND MN BREAK UP THE COARSE FE-SI COMPD. PLATES. AFTER 10 HR ANNEALING AT 360-80DEGREES AND AIR COOLING THESE CASTINGS HAVE 16-20 KG-MM PRIME2 TENSILE STRENGTH, 0.2-0.5PERCENT ELONGATION, 90-110 BRINELL HARDNESS, 9-12 KG-MM PRIME2 FATIGUE LIMIT FOR 5 TIMES 10 PRIME7 CYCLES, AND 5-6 KG-MM PRIME2 125 HR RUPTURE STRENGTH AT 300DEGREES. AFTER 12 HR HEATING AT 220-40DEGREES AND AIR COOLING, THE ABOVE PROPERTIES ARE 19-23, 0.2-0.5, 100-130, 10-13, AND 6-6.5, RESP. THE COEFF. OF LINEAR EXPANSION AT 20-300DEGREES IS (18.5-19.5) TIMES 10 PRIME6. THE ALLOYS ARE THUS SUITABLE FOR PISTONS IN "SUPERCHARGED AUTOMOTIVE ENGINES."

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200510020-9"

BUSAROV, Yu. P.

Draft

GENERALIZATION OF THE HYPOTHESIS OF Ye. S. SOROKIN TO INCLUDE NONLINEAR ELASTIC DAMPING ELEMENTS

Busarov, Yu. P. (Vladimir)

The hypothesis of Ye. S. Sorokin is extended to elastic damping elements with nonlinear elasticity curve. The generalization is performed by the method of direct linearization of the elasticity curve, allowing the equivalent rigidity $C(A,\omega)$ of an elastic element, generally dependent on amplitude A and deformation frequency ω, to be introduced. This equivalent rigidity is used in place of the constant rigidity in recording the absorption factor of an elastic element in its classical form:

$$\gamma(A,\omega)=\frac{S}{\pi C(A,\omega)A^2}, \qquad (1)$$

where S is the area of the hysteresis loop.

In correspondence with this definition of the absorption factor, the generalized hypothesis of Ye. S. Sorokin is written in the form

$$N=-C(A,\omega)[1+i\gamma(A,\omega)]x, \qquad (2)$$

where N is the reaction of the elastic element;

x is the deformation of the elastic element.

Based on the generalized hypothesis, the amplitude-frequency characteristic of the nonlinear oscillating system with mass m and one degree of freedom, perturbed by a harmonic force with amplitude F_0, is written in the convenient form

$$A=\frac{F_0}{\sqrt{[1-m\omega^2+C(A,\omega)]^2+[\gamma(A,\omega)C(A,\omega)]^2}}. \qquad (3)$$

known for the case of linear oscillations.

It is demonstrated that the solution of the nonlinear equation of an oscillating system

$$m\ddot{x}+N(x)=F_0\sin\omega t, \qquad (4)$$

where N(x) is the characteristic of the elastic damping element in the form of an experimental hysteresis loop, by the various approximate methods of

SECTION III SO: SELECTED ... FACILITIES

PCS-79
SEPT 71

Name: Institute of Biophysics, Pushchino

biophysics

Description:

(U) During this quarterly reporting period, 25 new articles were identified from the Institute of Biophysics, Pushchino. On the basis of these articles, it was possible to identify 32 new personalities with the institute. These personalities, the subjects of the articles, and the dates are given below:

All - biophysics/physiology

Aliyeva, S. A.	phosphorylation	1971 (34)
Apikayeva, G. F.	radiation effect	1970 (35)
Aripova, D. F.	radiation effect	1971 (36)
Azhipa, Ya. I.	hypoxia	1969 (37)
Bregadze, I. F.	radiation effect	1970 (38)
Busel, Ye. P.	luminescence	1970 (39)
Dmitriyeva, T. I.	radiation effect	1970 (39)
D..triyeva, V. A.	blood plasma	1969 (40)
Domareva, O. P.	radiation effect	1970 (39)
Dubrov, A. P.	biochemical analysis	1971 (41)
Gabelova, N. A.	muscle physiology	1971 (42)
Ganassi, Ye. E.	radiation effect	1970 (35)
Ivkova, M. N.	serum albumin	1971 (43)
Kasatkin, V. S.	phosphorylation	1971 (34)
Khokhlova, G. K.	muscle physiology	1971 (44)
Kislov, A. N.	salivary gland	1970 (45)
Klyagina, V. P.	oligonucleotide	1970 (46)
Korol, B. A.	radiation effect	1971 (44)
Kosheleva, G. N.	biochemical analysis	1971 (41)

BUSEL, Ye. P.

Kuzmina, A. V.	tissue culture	1973(47)
Markovich, D. S.	lactate dehydrogenase	1971(48)
Medvedeva, I. F.	radiation effect	1971(44)
Peshkova, L. V.	phosphorylation	1971(45)
Pronevich, L. A.	antibiotic	1973(50)
Rodionova, N. A.	mitochondrion	1972(51)
Shchipakin, V. N.	phosphorylation	1971(49)
Skobeyev, Ye. M.	radiation/vibration	1973(52)
[redacted]	radiation effect	1973(35)
Tsvetkov, V. D.	blood plasma	1969(40)
Zherlikina, N. V.	lactate dehydrogenase	1971(48)
Vilenchik, M. M.	radiation effect	1970(53)
Zamyatnin, A. A.	muscle physiology	1972(42)

Dubrov and Kosholeva (41) are associated with the laboratory of Cell Biophysics at the Institute. Reference 52 above is of special interest since it presents an investigation of combined stresses, i.e., radiation and vibration. In addition to the above articles, five of the twenty-five (54-58) were authored by persons already identified with the Institute of Biophysics, Pushchino.

Reference 55 associates the authors of the article, L. V. Slozhenkina, V. L. Migushina, and A. N. Kuzin, with the Department of Radiobiology at the Institute.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--PHENOL GERMANATES -U-

AUTHOR-(04)-ANIMOV, V.K., BUSEV, A.I., DZOTSENIDZE, N.YE., ZAYTSEV, B.YE.

COUNTRY OF INFO--USSR

B

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2), 329-35

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHENOL, ORGANOGERMANIUM COMPOUND, PYROCATECHOL, DYE, COMPLEX COMPOUND, IR SPECTRUM, ORGANIC ARSENIC COMPOUND, HYDROXYL RADICAL, QUINOLINE, CRYSTAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1567 STEP NO--UR/0079/70/040/002/0329/0335

CIRC ACCESSION NO--AP0112561

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0112561

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TREATING AQ. SOLNS. OF ESTERS OF GERMANIC ACID (WITH PYROCATECHOL, PYROGALLOL, GALLIC AND PYROGALLOLCARBOXYLIC ACIDS) WITH ORG. BASES (DIANTIPYRYLMETHANE, DIANTIPYRYLMETHYLMETHANE, DIPHENYLGUANIDINE, PH SUB4 ASCL, 3, PHENANTHROLINE, 8,HYDROXYQUINOLINE, BRILLIANT GREEN, METHYLENE BLUE, METHYL VIOLET AND CRYSTAL VIOLET) GAVE THE FOLLOWING COMPLEXES, WHICH WERE ANALYZED AND CHARACTERIZED BY IR SPECTRA (CURVES AND TABLES OF DATA SHOWN): TRICATECHYLGERMANATES OF: KIPHENYLGUANIDINE, 0,PHENANTHROLINE, 8,HYDROXYQUINOLINE, TETRAPHENYLARSONIUM; SAME FOR TRIPYROGALLYL GERMANATE, SAME FOR TRIS(5,CARBOXYPYROGALLYL) GERMANATE ALONG WITH ANALOGS: DIANTIPYRYLMETHANE, DIANTIPYRYLMETHYLMETHANE, BRILLIANT GREEN, CRYSTAL VIOLET, METHYLENE BLUE, METHYLENE VIOLET; SAME FOR TRIS(4,CARBOXYPYROGALLYL) GERMANATE. ALL WERE COLORED CRYST. SOLIDS SPARINGLY SOL. IN H SUB2 O AND READILY SOL. IN AQ. ACIDS AND ME SUB2-NCHO.

UNCLASSIFIED

1/3 013 UNCLASSIFIED PROCESSING DATE--090CT70
TITLE--ALPHA-(DITHIOCARBOXY)AMINO ACID AS MASKING REAGENTS -U-

AUTHOR-(04)-BUSEV, A.I., BYRKO, V.M., KOVTUN, N.P., KARALASHVILI, L.G.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(2), 237-42

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC SULFUR COMPOUND, AMINO ACID, HYDROGEN SULFIDE, CARBON DISULFIDE, COPPER COMPLEX, COBALT COMPLEX, METAL COMPLEX COMPOUND, PHOTOMETRIC ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/0925 STEP NO--UR/0075/70/025/002/0237/0242

CIRC ACCESSION NO--AP0113760
UNCLASSIFIED

2/3 013 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0113760

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. N-(DITHIOCARBOXY-N-METHYLGLYCINE DI-NH SUB4 SALT (I), A DI-NH SUB4 SALT OF N-(DITHIOCARBOXY)SARCOSINE, WAS SYNTHESIZED AND SUGGESTED FOR MASKING OF A NO. OF ELEMENTS OF THE H SUB2 S AND (NH SUB4) SUB2 S GROUPS. I IS PREPD. BY ADDING CS SUB2 TO AN AQ.-AMMONIACAL SOLN. OF SARCOSINE. NONREACTED CS SUB2 WAS EXTD. WITH PHME, ETOH WAS ADDED TO CRYSTALLIZE I, DECOMP. 139DEGREES, SOL. IN H SUB2 O, LESS SOL. IN ALC. AND CHCL SUB3. I REACTS WITH CU(II) IN A 2:1 RATIO TO FORM A COLORED COMPLEX WITH MAX. ABSORBANCE AT 440 M MU, WITH NI(II) IN THE SAME RATIO WITH A MAX. AT 350 M MU. CO REACTS WITH I IN A 1:3 RATIO; THE COMPLEX HAS MAX. ABSORBANCE AT 320 M MU. ZN(II), GA(III), CR(III), MG(II), SB(III), AS(III), NB(V), AND W(VI) DO NOT FORM PPTS. OR COLORED COMPLEXES WITH I. A COMPLEXOMETRIC METHOD WAS DEVELOPED FOR THE DETN. OF GA WITH 4-(2,PYRIDYLAZO)RESORCINOL (II) AT PH 2-3. CD, IN, AND BI ARE MASKED WITH I AND DO NOT INTERFERE IN THE DETN. AL, BA, CA AND MG DO NOT INTERFERE. NEUTRALIZE THE SOLN. WITH M NAOH, ADJUST TO PH 2-3 WITH N HOAC, THEN ADD A 25 FOLD EXCESS OF I COMPARED TO THE ELEMENT THAT INTERFERES, 2-3 DROPS OF II AND TITRATE WITH COMPLEXON III FROM RED TO YELLOW. A PHOTOMETRIC METHOD WAS DEVELOPED FOR THE DETN. OF GA WITH II WITHOUT SEPN. OF IN. ADJUST THE SOLN. CONTG. GA AND IN TO PH 3.25 WITH AN NH SUB4 OAC BUFFER, ADD 1 ML 5PERCENT AQ. I, THEN 1.25 ML II, AND DIL. TO 25 ML WITH THE BUFFER. MEASURE THE ABSORBANCE PHOTOMETRICALLY BY USING A GREEN FILTER. AN EXTN. PHOTOMETRIC METHOD WAS DEVELOPED FOR W DETN. WITH RHODAMINE B (III); NO INTERFERENCE IS ELIMINATED BY MASKING WITH I.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200510020-9"

3/3 013 UNCLASSIFIED PROCESSING DATE--090CT70
CIRC ACCESSION NO--AP0113760
ABSTRACT/EXTRACT--ADD TO THE SOLN. CONTG. W AND MO 15 ML 0.15N HCL, 20-30 MG I, AND 5 ML 0.1PERCENT III SOLN. EXT. W WITH 2 50 ML PORTIONS OF CHCL 3. COMBINE THE EXTS., WASH TWICE WITH 15 ML 0.15N HCL AND AGAIN EXT. WITH 5 ML CHCL SUB3. DIL. THE COMBINED ORG. LAYERS TO 100 ML WITH ISOAMYL ALC. AND DET. PHOTOMETRICALLY BY USING A NO. 4 FILTER.
FACILITY: MOSCOW STATE UNIV., MOSCOW, USSR.

UNCLASSIFIED

1/2 006 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--ACID BASE PROPERTIES OF COMPLEXES OF METALS WITH ANTIPYRINE AND ITS DERIVATIVES IN NONAQUEOUSMEDIA -U-

AUTHOR-(03)-AKIMOV, Y.K., BUSEV, A.I., YEMELYANOVA, I.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(1), 40-4

B

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--METAL COMPLEX COMPOUND, HETERO CYCLIC NITROGEN COMPOUND, ACID BASE COMPLEX, CADMIUM COMPLEX, BISMUTH COMPOUND, PLATINUM COMPLEX

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2066 STEP NO--UR/0075/70/025/001/0040/0044

CIRC ACCESSION NO--AP0125653

UNCLASSIFIED

2/2 006 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125653

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPLEX COMPDS. OF METALS WITH ANTIPYRINE AND ITS DERIVS. OF THE M(R) SUBN X SUBM AND (R.H) SUBN-M (ME PRIME X SUBN)TYPE, WHERE R IS THE LIGAND AND X IS EITHER CL PRIME NEGATIVE, BR PRIME NEGATIVE, I PRIME NEGATIVE, SCN PRIME NEGATIVE, BEHAVE BOTH AS ACID AND BASE IN NONAQ. MEDIA. THEIR ACID PROPERTIES DEPEND ON THE COMPLEX FORMING METAL AND THEIR BASIC PROPERTIES ON THE NATURE OF THE LIGAND. COMPLEX COMPDS. OF ZN, CD, HG, CO, AND MN WITH 1-2 MCLS. OF THE LIGAND IN M SUB2 CO BEHAVE AS BASES. COMPDS. OF THE M(R) SUBN X SUBM TYPE ARE AMPHOLYTES. COMPLEX COMPDS. OF BI, PT, OS, ZN, AND SB WITH ANTIPYRINE AND IS DERIVS. OF THE 2ND TYPE BEHAVE AS ACICS IN ME SUB2 CO. FACILITY: MOSCOW STATE UNIV., MOSCOW, USSR.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--EXTRACTION AND PHOTOMETRIC DETERMINATION OF GOLD -U-

AUTHOR-(03)-BLSEV, A.I., IVANOV, V.M., GORBUNOVA, N.N.

COUNTRY OF INFO--USSR

B

SOURCE--ZH. ANAL. KHIM. 1970, 25(3), 461-5

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--GOLD, EXTRACTIVE METALLURGY, PHOTOMETRIC ANALYSIS, SLIME, ANODIC REFINING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0480 STEP NO--UR/0075/70/025/003/0461/0465

CIRC ACCESSION NO--AP0126232

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0126232

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AU IS DETD. BY AN EXTN. PHOTOMETRIC METHOD BY USING (4,DIMETHYLAMINOPHENYL)(4,BENZYLMETHYLAMINOPHENYL) ANTIPYRYLCARBINOL (CHROMOPYRAZOLE-I) (I). I DISSOLVES IN H SUB2 O GIVING A VIOLET COLOR WITH ABSORBANCE MAX. AT 470-80 AND 600 NM, RESP. I SI EXTD. BY NONPOLAR SOLVENTS. AFTER AU ADDN. THE COLOR DOES NOT CHANGE, BUT THE PHME EXT. HAS AN ABSORBANCE MAX. AT 580 NM. OPTIMUM CONDITIONS FOR COMPLEX FORMATION EXIST AT PH 1.0-2.0 AND A 20-30 FOLD EXCESS OF I. THE ABSORBANCE OF THE EXTS. IS PROPORTIONAL TO AU CONCN. FOR 0.5-2.5 MUG AU-ML; THE MOLAR ABSORPTIVITY IS (6.08 PLUS OR MINUS 0.07) TIMES 10 PRIME4. I CAN BE USED TO DET. 6.6-1.1PERCENT IN DORE ALLOY, 0.01-0.11PERCENT AU IN THE DUST PRODUCED DURING THE FUSION OF THE ANODIC SLIME, AND 0.0045-0.0670PERCENT AU IN THE SLAG AFTER REMELTING ANODIC SLIME. AU CAN BE DETD. WITHOUT SEPN. FROM OTHER ELEMENTS DIRECTLY AFTER DISSOLN. OF THE SAMPLE. FACILITY: MOSCOW STATE UNIV., MOSCOW, USSR.

UNCLASSIFIED

BUSEVA, T. M.

JPRS 59863
22 Aug 73 (3)

THE BEHAVIOR OF RARE-EARTH-BASED ABSORBING MATERIALS UNDER IRRADIATION

[Paper by V. P. Gol'tsev, T. M. Buseva, and V. M. Bortsov, Scientific Research Institute for Atomic Reactors imeni V. I. Lenin, Dimitrovgrad, USSR; Dimitrovgrad, Pogloshchayushchiye materialy i sterzhni regulirovaniya bystrykh reaktorov (Absorbing materials and control rods for fast reactors), Russian, International Working Group for Fast Reactors Specialists Meeting, Dimitrovgrad, 4-8 June 1973]

The results of an investigation of the radiation stability of pure and alloyed europium oxide, irradiated at temperatures of 500 - 600°C by an integral flux of 1×10^{22} neutrons per square centimeter are given. The dimensional and structural stabilities and compatibility with the jacket (cladding) material were studied. Conclusions were made concerning the application of the absorbents investigated in fast reactors.

1. Introduction

In fast reactors, characterized by a high density of neutron fluxes and considerable operating temperatures, the application of n,γ absorbents is very promising.

The n,γ-absorbing materials differ advantageously from the n,α-absorbents in their lack of nuclear reactions, leading to the formation of gaseous products. In connection with this, the problem of gas liberation and gas swelling is removed, and these are one of the principal radiation effects in n,α-absorbents. In n,γ-absorbents, as a consequence of the capture of neutrons, either isotopes of the initial substance are formed, or atoms of the adjacent element in the periodic system.

1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--EXTRACTION AND PHOTOMETRIC DETERMINATION OF PALLADIUM BY 5,2,THIAZOLYLAZO,2,6, DIHYDROXYPYRIDINE -U-

AUTHOR-(03)-IVANOV, V.M., BUSEY, A.I., ELOBIKY, U.

B

COUNTRY OF INFO--USSR

SOURCE--VESTN. MOSK. UNIV., KHIM. 1970, 11,1, 88-92

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PALLADIUM, THIAZOLE, PYRIDINE, METAL ION, PHOTOMETRIC ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0600 STEP NO--UR/0189/70/011/001/0088/0092

CIRC ACCESSION NO--AP0119518

UNCLASSIFIED